The second secon



COPY OF PAPERS ORIGINALLY FILED

PIGURE 1

Staphylothermus marinus - F1-12LC

1	ATG		_								_											6
1	Met	Ser	Leu	Asn	Lys	His	Ser	Trp	Met	Asp	Met	Ile	Ile	Phe	lle	Leu	Ser	Phe	Ser	Phe		. 2
61	CCA	TTA	ACA	ATG	ATC	GCA	TTA	GCT	ATC	TCT	ATG	TCG	TCA	TGG	TTT	AAT	АТА	TGG	ААТ	AAT		120
21	Pro	Leu	Thr	Met	Ile	Ala	Leu	Ala	Ile	Ser	Met	Ser	Ser	Trp	Phe	Asn	Ile	Trp	Asn	Asn		4
121																						180
41	Ala	Leu	Ser	Asp	Leu	Gly	His	Ala	Val	Lys	Ser	Ser	Val	Ala	Pro	Ile	Phe	Asn	Leu	Gly	-	. ·
181															ААТ							240
61	Leu	Ala	Ile	Gly	Gly	He	Leu	Ile	Val	Ile	Val	Gly	Leu	Arg	Asn	Leu	Tyr	Ser	Trp	Ser .		.8
241															AAC							300
81	Arg	Val	Lys	Gly	Ser	Leu	Ile	He	Ser	Met	Gly	Val	Phe	Leu	Asn	Leu	Ile	Gly	.Val	Phe		100
301															ттт						-	360
101	Asp	Glu	Val	Tyr	Gly	Trp	Ile	His	Phe	Leu	Val	Ser	Val	Leu	Phe	Phe	Leu	Ser	Ile	Ile		120
361															GCT							420
121	Ala	Tyr	Phe	Ile	Ala	Ile	Ser	Ile	Leu	Asp	Lys	Ser	Ттр	Ile	Ala	Val	Leu	Leu	Ile	Ile	·	140
421															CCG							480
141	Gly	Hıs	lle	Ala	Met	Trp	Tyr	Leu	His	Phe	Ala	Ser	Glu	Ile	Pro	Arg	Gly	Ala	Ala	lle		160
481															AGA							540
161	Pro	Glu	Leu	Leu	Ala	Val	Phe	Ser	Phe	Leu	Pro	Phe	Tyr	Ile	Arg	Asp	Tyr	Phe	Lys	Şer		180
541				CGA																-		555
181	Tyr	Thr	Lys	Arg	End																	185

Pyrodictium - TAG11-17LC

							FYIO	arcc	1 1111	- 1M	GII-	TILL	•							
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																				780 260
																				840 280
																				900 300
																				960 320
GAT	GTG	CTC	GGG	CCG	GGC	CGC	TAC	GCA	GAC	ATG	CTG	ATA	GAG	CTG	GCG	CAC	GAG	GAG	TGC	1020 340
ССТ	CCG	GGG	GCC	GGT	GGC	TGA	-		•										-	1041 347
	Met TTT Phe GTA Val CTC Leu GCG Ala AAA Lys GGC Gly CCC GASp GAT Asp GTG Val TAC Tyr GAG Glu ATG Met CTG Leu CTG Leu CTC CTC CTC CTC CTC CTC CTC CTC CTT CTC CTC CTT CTC CTC CTT CTT CTC CTC CTT CTT CTC CTC CTT CTT CTT CTC CTT C	Met Lys TTT GCA Phe Ala GTA GCT Val Ala CTC CTG Leu Leu GCG TAT Ala Tyr AAA GAG Lys Glu GCC TAC Pro Tyr GAC TTC Asp Phe GAT GCC Asp Ala GTG GGG Val Gly TAC GCG Tyr Ala GAG TAC Clu Tyr ATG GCG Met Ala CTG GTG Leu Val TCC CGT Ser Arg GAT GTC Asp Val CCT CCG	Met Lys Leu TTT GCA TTT Phe Ala Phe GTA GCT GTG Val Ala Val CTC CTG GCC Leu Leu Ala GCG TAT AGT Ala Tyr Ser AAA GAG TTC Lys Glu Phe GGC GCT GGG Gly Ala Gly CCC TAC ATG Pro Tyr Met GAC TTC CGG Asp Phe Arg GAT GCC CGG Asp Ala Arg GTG GGG TTC Val Gly Phe TAC GCG GTG Tyr Ala Val GAG TAC AAG Glu Tyr Lys ATG GCG GGC Met Ala Gly CTG GTG GTG Leu Val Val TCC CGT AGC Ser Arg Ser GAT GTG CTC Asp Val Leu CCT CCG GGG	TTT GCA TTT TAC Phe Ala Phe Tyr GTA GCT GTG GAC Val Ala Val Asp CTC CTG GCC GCT Leu Leu Ala Ala GCG TAT AGT AGT Ala Tyr Ser Ser AAA GAG TTC AGC Lys Glu Phe Ser GGC GCT GGG GGC Gly Ala Gly Gly CCC TAC ATG GCT Pro Tyr Met Ala GAC TTC CGG GCC Asp Phe Arg Gly GAT GCC CGG GCT Asp Ala Arg Ala GTG GGG TTC AGT Val Gly Phe Ser TAC GCG GTG GCT Tyr Ala Val Ala GAG TAC AAG ACG Glu Tyr Lys Thr ATG GCG GGC GTT Met Ala Gly Val CTG GTG GTG TAT Leu Val Val Tyr TCC CGT AGC CCG Asp Val Leu Gly CCT CCG GGG GCC	MET LYS LEU LEU GIU TIT GCA TIT TAC TGG Phe Ala Phe Tyr Trp GTA GCT GTG GAC ACA Val Ala Val Asp Thr CTC CTG GCC GCT GTG Leu Leu Ala Ala Val GCG TAT AGT AGT CTG Ala Tyr Ser Ser Leu AAA GAG TTC AGC GTG Lys Glu Phe Ser Val GCC TAC ATG GCT GTG Pro Tyr Met Ala Val GAC TTC CGG GGC CAC Asp Phe Arg Gly His GAT GCC CGG GCT GTG Asp Ala Arg Ala Val GTG GGG TTC AGT ATG Val Gly Phe Ser Met TAC GCG GTG GCT GCT Tyr Ala Val Ala Ala GAG TAC AAG ACG CCG Glu Tyr Lys Thr Pro ATG GCG GGC GTT GAC Met Ala Gly Val Asp CTC GTG GTG TAT GGG Leu Val Val Tyr Gly TCC CGT AGC CCG GTG Asp Val Leu Gly Pro CCT CCG GGG GCC GTT CYS	Met Lys Leu Leu Glu Pro TTT GCA TTT TAC TGG TTT Phe Ala Phe Tyr Trp Phe GTA GCT GTG GAC ACA GGG Val Ala Val Asp Thr Gly CTC CTG GCC GCT GTG GCT Leu Leu Ala Ala Val Ala GCG TAT AGT AGT CTG CAC Ala Tyr Ser Ser Leu His AAA GAG TTC AGC GTG ACC Lys Glu Phe Ser Val Thr GCC GCT GGG GGC AAC CCG Gly Ala Gly Gly Asn Pro CCC TAC ATG GCT GTG CTG Pro Tyr Met Ala Val Leu GAC TTC CGG GGC CAC GGG Asp Phe Arg Gly His Gly GAT GCC CGG GCT GTG GTG Asp Ala Arg Ala Val Val GTG GGG TTC AGT ATG GGC Val Gly Phe Ser Met Gly TAC GCG GTG GCT GCT GAT Tyr Ala Val Ala Ala Asp GAG TAC AAG ACG CCG CTG Glu Tyr Lys Thr Pro Leu ATG GCG GGC GTT GAC CTC Met Ala Gly Val Asp Leu CTG GTG GTG TTAT GGG CCC Leu Val Val Tyr Gly Pro TCC CGT AGC CCG TGT GGC Asp Val Leu Gly Pro Gly CCT CCG GGG GCC GGT GGC	ATG AAA CTC CTT GAG CCC ACA Met Lys Leu Leu Glu Pro Thr TTT GCA TTT TAC TGG TTT CTG Phe Ala Phe Tyr Trp Phe Leu GTA GCT GTG GAC ACA GGG GTG Val Ala Val Asp Thr Gly Val CTC CTG GCC GCT GTG GCT GTC Leu Leu Ala Ala Val Ala Val Ala Val GCG TAT AGT AGT CTG CAC CCG Ala Tyr Ser Ser Leu His Pro AAA GAG TTC AGC GTG ACC GCG Lys Glu Phe Ser Val Thr Ala GCC GTG GTG GTG GTG GTG GTG TYR Met Ala Val Leu Ala GAG TTC AGG GGC GAG GAG AAC CCG GTG GTG TYR Met Ala Val Leu Ala GASp Phe Arg Gly His Gly Glu GAT GCC CGG GCT GTG GTG GGC ASp Ala Arg Ala Val Val Gly GTG GGG GTG ATG GGC GGC GTG GTG GTG GTG GTG GTG GTG G	ATG AAA CTC CTT GAG CCC ACA AAT Met Lys Leu Leu Glu Pro Thr Asn TTT GCA TTT TAC TGG TTT CTG GCC Phe Ala Phe Tyr Trp Phe Leu Ala GTA GCT GTG GAC ACA GGG GTG GCT Val Ala Val Asp Thr Gly Val Ala CTC CTG GCC GCT GTG GCT GTG GCT GTG Leu Leu Ala Ala Val Ala Val Leu GCG TAT AGT AGT CTG CAC CCG GAG Ala Tyr Ser Ser Leu His Pro Glu AAA GAG TTC AGC GTG ACC GCG GAG Lys Glu Phe Ser Val Thr Ala Glu GCC TAC ATG GCT GTG TTC GLY Ala Gly Gly Asn Pro Val Phe CCC TAC ATG GCT GTG CTG GCC CGG AGAP ACA ACA ACA GGG GAG ACC TTC CGG GCC CAC GGG GAG ACC ACC GCG GAG ACC TTC CGG GCC CAC GGG GAG ACC ACC GCG GAG ACC TTC CGG GCC CTG GCC GCC TAC ASP Ala Arg Ala Val Val Gly Tyr GTG GGG TTC AGT ATG GCC GCC GCC TAC ACC GCG GCC TTC ACC GCC GCC GCC TCC GCC GCC GCC TTC ACC GCC GCC GCC GCC GCC GCC GCC GCC GC	ATG AAA CTC CTT GAG CCC ACA AAT ACC Met Lys Leu Leu Glu Pro Thr Asn Thr TTT GCA TTT TAC TGG TTT CTG GCC GTG Phe Ala Phe Tyr Trp Phe Leu Ala Val GTA GCT GTG GAC ACA GGG GTG GCT CGG Val Ala Val Asp Thr Gly Val Ala Arg CTC CTG GCC GCT GTG GCT GTG GCT GTG GCT TTG GCG Leu Leu Ala Ala Val Ala Val Leu Ala GCG TAT AGT AGT CTG CAC CCG GAG AGC Ala Tyr Ser Ser Leu His Pro Glu Ser AAA GAG TTC AGC GTG ACC GCG GAG GAT Lys Glu Phe Ser Val Thr Ala Glu Asp GCC GTT GGG GCT GTG GTC TTC GTT GIY Ala Gly Gly Asn Pro Val Phe Val CCC TAC ATG GCT GTG CTG GCC CGG GAG AGC ALys Glu Phe Ser Val Leu Ala Arg Glu GAT TYC CGG GGC CAC GGG GAG AGC GGG ASp Phe Arg Gly His Gly Glu Ser Gly GAS Ala Arg Ala Arg Ala Val Val Gly Tyr Val GTG GGG TTC AGT ATG GCC CGG GCT GTA CASp Ala Arg Ala Val Val Gly Tyr Val GTG GGG TTC AGT ATG GCC CGG GTG TTC GTT ALA ATG GTC ASp Ala Arg Ala Val Val Gly Tyr Val GTG GGG GTG GTG GTG GCC CGG GTG TTC GTT ALA ATG GTC ASp Ala Arg Ala Ala Ala Asp Ser Pro Tyr Ala Val Ala Ala Asp Ser Pro Tyr Ala Val Ala Ala Asp Ser Pro Tyr Ala Val Asp Leu Gly Phe Gly Trp ATG GCC GGC GCC GTT GCC GGC TTC GCC GCC G	ATG AAA CTC CTT GAG CCC ACA AAT ACC TGG Met Lys Leu Leu Glu Pro Thr Asn Thr Ser Thr CTG GCC GTG TAT Phe Ala Phe Tyr Trp Phe Leu Ala Val Tyr GTA GTG GTG GCC GTG GTG GTA GTA GTG GTG GTG GTG GTA GTG GTG	ATG AAA CTC CTT GAG CCC ACA AAT ACC TGG TAC MET Lys Leu Leu Glu Pro Thr Asn Thr Ser Tyr TTT GCA TTT TAC TGG TTT CTG GCC GTG TAT ACG Phe Ala Phe Tyr Trp Phe Leu Ala Val Tyr Thr GTA ACG Phe Ala Phe Tyr Trp Phe Leu Ala Val Tyr Thr GTA GCT GTG GAC ACA GGG GTG GCT CGG GTG CCT Val Ala Val Asp Thr Gly Val Ala Arg Val Pro CTC CTG GCC GCT GTG GTG GCT GTG GCC GTG ACA ACA GGG GTG GTT TTG GCG CTT GTT Leu Leu Ala Ala Val Ala Val Leu Ala Leu Val GCG TAT AGT AGT CTG CAC CCG GAG AGC TGT CGG Ala Tyr Ser Ser Leu His Pro Glu Ser Cys Arg AAA GAG TTC AGC GTG ACC GCG GAG GAT GGC TTG Lys Glu Phe Ser Val Thr Ala Glu Asp Gly Leu Met Gly Ala Gly Gly Asn Pro Val Phe Val Leu Met CCC TAC ATG GCT GTG GTG CTG GCC GTG TTC GTT TTG ATG GTY ALA GGY GLY ASN PRO Val Phe Val Leu Met CCC TAC ATG GCT GTG GTG GCC CGG GAG GAC CTC GTG Pro Tyr Met Ala Val Leu Ala Arg Glu Leu Val Gly His Gly Glu Ser Gly Gly Ser GAS ALA ARG ALA GAG GTG GGG GAG AGC GGG GAG GCC CGG GAS ALA GCC GTG GTG TTC GTT TTG ATG GCC TYR ATG GCC CGG GCC TAC GTG GTG GTG GTG GTG GTG GTG GTG GTG GT	ATG AAA CTC CTT GAG CCC ACA AAT ACC TOO TAC ACG Met Lys Leu Leu Glu Pro Thr Asn Thr Ser Tyr Thr Thr GCA TTT TAC TGG TTT CTG GCC GTG TAT ACG TGG Phe Ala Phe Tyr Trp Phe Leu Ala Val Tyr Thr Trp GTA GCT GTG GAC ACA GGG GTG GCT GGG GTG CCT GGG Val Ala Val Asp Thr Gly Val Ala Arg Val Pro Gly CTC CTG GCC GCT GTG GTG GCT GTG GTG GCT GTG GCC GCT Leu Leu Ala Ala Val Ala Val Leu Ala Leu Val Val GLy Glu Phe Ser Leu His Pro Glu Ser Cys Arg Pro Ala GAG TTC AGC GCG GAG GAG GAT GGC TTG GTG GCG GCT GTG TTG AGC GCG GAG GAG GAT GGC TTG GTG GCG GCT GAI ATYR Ser Ser Leu His Pro Glu Ser Cys Arg Pro Ala GAG GTT GAG GCG GCT GGG GAG GAG GAT GGC TTG GTG GCG GCT GGG GAG GAG GAT GGC TTG GTG GCG GCT GAI AGC GCG GAG GAG GAT GGC TTG GTG GAG GAT GGC GCT GAI AGC GCG GAG GAT GGC TTG GTG GAG GAT GGC GCT GAI AGC GCG GAG GAG GAT GGC TTG GAG GAT AGC GCG GAG GAG GCT GAG GAG GAT GGC TTG GAG GAT AGC GCG GAG GAG GCT GAG GAG AGC GCG GAG GCT GAG GAG AGC GGG GAG GCT GAG GAG AGC GAG GAG GCT GAG ACG ASP ALA ARG GCT GAG GAG GAG GGG GAG GCT GAG ACG ASP ALA ARG GLY HIS GLY GLY ALA ARG GCC GAG GAG GCT GAG ACG ASP ALA ARG ALA VAL VAL GLY TYR VAL SER GLU ARG GCG GGG GCT GAG ACG GAG GCT GAG ACG GAG GCT GAG ACG ACG GAG TTC GAG ACG ACG GAG TTC GAG ACG ACG GAG TTC GAG ACG GAG TTC GAG ACG GAG TTC GAG ACG GAG TAC AAG ACG CCG GCC GCC GAC TAC TAT AGG CTC TYR ALA VAL ALA ALA ASP SER PRO TYR TYR ARG Leu GLY PHO GLY TRP VAL GLY VAL ATA GCC GCG GTG GTG GCT GAG GCT GAG GAG GCC GCC GCG GAC CCG CCG GAG GCT GAG GAG ACC CCG GAG GCC GCT GAG GAG ACC CCG GAG GCC GCT GAG GAG ACC CCG GCG GCC GCC GCG GCC GCC	ATG AAA CTC CTT GAG CCC ACA AAT ACC TOO TAC ACG CTC Met Lys Leu Leu Glu Pro Thr Asn Thr See Tyr Thr Leu Thr Cluster See Tyr Thr Leu Thr Coc Tro GCC GTG TAT ACG TGG TTA CTG GCT GTG GAC ACA GGG GTG GCT GTG TAT ACG TGG TTA CTG GCT GTG GAC ACA GGG GTG GCT GTG GTG CTC CTG GCC GCT GTG GAC ACA GGG GTG GCT GTG TTT GTG GCC GCT GTG GCC GCT GTG GTG	Met Lys Leu Leu Glu Pro Thr Asn Thr Ser Tyr Thr Leu Leu TIT GCA TIT TAC TGG TIT CTG GCC GTG TAT ACG TGG TTA CCC Phe Ala Phe Tyr Trp Phe Leu Ala Val Tyr Thr Trp Leu Pro Glu GCT GTG GAC ACA GGG GTG GCT GGG GTG CCT GGG CTC GGG Val Ala Val Asp Thr Gly Val Ala Arg Val Pro Gly Leu Gly CTC CTG GCC GCT GTG GCT GTG GCT GTG GCC GCT AAA ALA Val Ala Val Leu Ala Leu Val Val Ser Val GLA AAA GAG TTC AGC GTG ACC GCG GAG AGC TTG TGG GTT GTG GCT ALA GAG ATC AGC GTG ACC GCG GAG GAT GGC TTG GTG GTT GTG GCT ALA GAG GCT GGG GAA ACC CCG GAG GAT GGC TTG GTG GTT GTG GCT GCG GCT GGG GCC GCT GGG GCC GCT GCG GCC GTG TCC GCC G	AND AAA CTC CTT GAG CCC ACA AAT ACC TOO TAC ACG CTG TTA CAG Met Lys Leu Leu Glu Pro Thr Asn Thr See Tyr Thr Leu Leu Glu TTT GCA TTT TAC TOG TTT CTG GCC GTG TAT ACG TGG TTA CCC GGT Phe Ala Phe Tyr Trp Phe Leu Ala Val Tyr Thr Trp Leu Pro Gly GTA GCT GTG GAC ACA GGG GTG GCT GGG GTG CCT GGG CTC GGC CGG Val Ala Val Asp Thr Gly Val Ala Arg Val Pro Gly Leu Gly Arg CTC CTG GCC GCT GTG GCT GTC TTG GGG CTT GTT G	AND AAA CTC CTT GAG CCC ACA AAT ACC TGG TAC ACG CTG TTA CAG GAT Met Lys Leu Leu Glu Pro Thr Asn Thr Ser Tyr Thr Leu Leu Glu Asp TTT GCA TTT TAC TGG TTT CTG GCC GTG TAT ACG TGG TTA CCC GGT GTC Phe Ala Phe Tyr Trp Phe Leu Ala Val Tyr Thr Trp Leu Pro Gly Val GTA ACG GTG GTG GTG GTG GCC GTG GTG GTG GTG G	ANG AAA CTC CTT GAG CCC ACA AAT ACC TOO TAC ACG CTG TTA CAG GAT TTA Met Ley Leu Glu Pro Thr Asn Thr See Tyr Thr Leu Leu Gln Asp Leu TtT GCA TTT TAC TGG TTT CTG GCC GTG TAT ACG TGG TTA CCC GGT GTC CTA Phe Ala Phe Tyr Trp Phe Leu Ala Val Tyr Thr Trp Leu Pro Gly Val Leu GTA ACG TGG GTG GTG GTG GTG GTG GTG GTG GTG G	ANG AAA CTC CTT GAG CCC ACA AAT ACC TGG TTA CAG CTG TTA CAG GAT TTA GCA Met Lys Leu Leu Glu Pro Thr Asn Thr Sex Tyr Thr Leu Leu Gln Asp Leu Ala TTT GCA TTT TAC TGG TTT CTG GCC GTG TAT ACG TGG TTA CCC GGT GTC CTA GTC Phe Ala Phe Tyr Trp Phe Leu Ala Val Tyr Thr Trp Leu Pro Gly Val Leu Val GTA GCT GTG GAC ACA GGG GTG GCT CGG GTG CCT GGG CTG GGC CGG GGC GGT AGG Val Ala Val Asp Thr Gly Val Ala Arg Val Pro Gly Leu Gly Arg Arg Gly Lys CTC CTG GCC GCT GTG GCT GTC TTT GG GC CTT GTT G	ATG AAA CTC CTT GAG CCC ACA AAT ACC TGG TAC ACG CTG TTA CAG GAT TTA GCA TEG Met Lys Leu Leu Glu Pro The Asn The Set Tyr The Leu Leu Glu Asp Leu Ala Leu City Leu Leu Glu Pro The Asn The Set Tyr The Leu Leu Glu Asp Leu Ala Leu City Can Ala Pro Try Try Pro Leu Ala Val Tyr The Try Leu Pro Gly Val Leu Val Asg GTA GCT GGT GGT GGT GGT GGT GGT GGT GGT GGT	AND AAA CTC CTT GAG CCC ACA AAT ACC TGG TAC ACG CTG TTA CAG GAT TTA GCA TTG CAT Met Lys Leu Leu Glu Pro Thr Ash Thr See Tyr Thr Leu Leu Glu Asp Leu Ala Leu His TTT GCA TTT TAC TGG TTT CTG GCC GTG TAT ACG TGG TTA CCC GGT GTC CTG GGC CGC GGC GGC GGC CGC GGC GGC GGC CGC GGC GG

FIGURE 3 Archaeoglobus Venificus SN P6-24LC

						7.1	CHAC	0930	~	-								~ (7- 2	4, _
1	ATG	CCA	TAT	GTT Val	AGG	AAT Asn	GGT Gly	GGT Gly	GTA Vbl	AAT Aan	ATC-	TAT Tyr	TAT Tyr	GAA Glu	CTG Leu	GTG Val	GAT Asp	GGA Gly	Pro.	GAG Glu	- 60 20
1	Met	FIU	LYL	•41			•	-		-	•	٠,	_	a			΄.	4	٠. `	سوية -	
									J	وسدد	·		,	BBT		TGG	AAA	GAG	CAA	'AGA	120
61	CCA	CCA	ATT	GTC	TTT	GTT	CAC	GGA	TGG	ACA	GCA	AAT.	Mot	Den	Phe	Tro	Lvs	Glu	Gln	AGA _	40
21	Pro	Pro	Ile	Val	Phe	Val	His	GIY	тър	Thx	Ald	ASII	Mec	AOI.	Phe		*	_ ^			تأريء عا
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	aam		بالماعات	CCN	ccc	ΔGG	AAT	ATG	ATG	TTG	TIT	GTC	GAT	AAC	AGA Arg	GGT	CAT	GGC	AGG	TCC	_ 180
121 41	CGI	TMI	Phe	Ala	Glv	Arq	Asn	Met	Met	Leu	Phe	Val	Asp	Asn	Arg	Gly	HIS	GIY	AIG	Ser	60
41	Arg	.1.				_													, , , , , , ,		: **=* -
									m > C	BC A		GNG	מממ	TTC	ATT Ile	TCA	GAT	TTA	GAT	GCG	- 240
181	GAT	AAG	CCA	CTT	GGA	TAC	GAT	TIC	THE	Aca	Phe	Glu	Asn	Phe	Ile	Ser	Asp	Leu	Asp	Ala	80.
61	Asp	Lys	Pro	Leu	GIA	туг	ASP	FIIC	1 7 1	n. g							٠.				
																	áma	CC.	ACA	ATY	300
241	CTT	GTT	AGG	GAG	ACT	GGA	GTG	GAG	AAA	TTT	GTT	CTC	GTC	GGA	CAT His	TCA	TIC	GLV	Thr	Met	100
81	Val	Val	Arg	Glu	Thr	Gly	Val	Glu	Lys	Phe	Val	Leu	Val	GIY	His	261	Fire				
-																			· ~ /~	22	
		•				mom	TCC	CNG	ጥልጥ	ccc	ААТ	CGG	GTT	CTT	GCT	CTA	ATC	CTC	ATA	GGT Gly	360
301	ATC	TCT	ATG	AAG	TAC	101	Cor	Glu	Tvr	Arg	Asn	Arg	Val	Leu	Ala	Leu	Ile	Leu	Ile	Gly	120
101	He	Ser	met	ьуѕ	IAT	Cys	J	010	-1		-	_						=	5.3	1.5	
															mm 8	CCN	DAG.	ATT	-Lalah	GCA	420
361	GGT	GGG	AGC	AGA	ATA	AAG	CTT	CTA	CAC	AGA	ATT	GGA	TAT	CCT	Len	Ala	Lvs	Tle	Leu	Ala	420 140
121	Gly	Gly	Ser	Arg	Ile	Lys	Leu	Leu	His	Arg	116	GIY	1 y L	PIO	Deu	71.44	-1-	5	, °	Ala	
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	TCC	-		mac	- • NAG	. אאר	. TO	י דרם	AGA	TTG	GTC	GCA	GAT	CTT	TCC	TTT	GGC	AAA	AAT	_GCT	480
	TCC	ATT	N I a	Tur	LVS	Lvs	Ser	Ser	Arg	Leu	Val	Ala	Asp	Leu	Ser	Phe	Gly	Lys	Asn	Ala	160
141	Ser	116	, MIG		2,0	-1-	_		_								750	*			in the Section
													CAT	ጥአጥ	מסמ	ccc	TCC	TAC	GTG	GCA	540
481	GGT	GAA	CTT	AAA 1	GAG	TGG	GGA	TGG	AAA	CAG	GCA	Mor	Den	TVr	Thr	Pro	Ser	Tyr	Val	Ala	540 180
161	Gly	Glu	Lev	ı Lys	s-G1 u	Tr	GIY	trt	ь гуз	GII	MIG	-	. AJP	- 7 -				- Ja-1			180
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E 4 3	n TrC	ተከረ	י אכינ	AT :	AGE	A AC	r CTI	ACC	AAA	GTO	TAA ;	. CLI	GAA	TAA	ATC	TTG	GAG	AAA	TLO	GAC Asp	200
541 181	Met	Tvi	Thi	Ty	Arg	Thi	c Lev	ı Thi	Lys	; Val	l Asn	Lev	ı Glu	Asn	i iie	Leu	GIU	LLYS	, ,,,,	Asp	
101											^ ,-						î = 1	٠	-	·	
							- cm	r cc:	C D I	C DC	: GAT	GCE	CTA	TTG	CCC	GTT	AGC	AAA	TCA	GTT Val	660
601	TGT	. cc	A AC	A CTO	G AT	r Arv	o Vai	i GG/	TGli	ı Glı	ASE	Ala	Leu	Leu	Pro	Val	Sei	Lys	Sex	Val	
201	Cys	Pro	5 Tn:	r Let	7 774	6 11											-		21.7	· _ ` ·	ું કરે '
																	·mac	· ccc	י ראיז	TGC	720
661	GAG	CT	G AG	C AG	G AG	G AT	A GA	AA A	C TC	A AA	G CTT	rGT	3 ATC	ATC	. CC) April	Sei	Glv	His	TGC Cys	240
221	Gli	Le	u Se	r Ar	g Ar	g 11	e Gl	u Ası	n Se	r Ly:	s Lev	ı va.	TITE	. 116	FIC	, no			- , -	Cys	
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	are:			m C3	ר ארי	_ጉ ርር	ם מ	T GA	G GT	T AA'	T AG	A GC	TA A	GAG	GAA	TTC	AT	r TCI	r TCI	GCA Ala	780
721	GIA	A ATO	G CT	ı GA	u Se	r Pr	o Se	r Gl	u Va	l As	n Arg	g Alá	a Met	. Ası	o Glu	ı Phe	110	e Sei	Sei	Ala	260
241	va.	ı ne	C DE																	-	
																					789
781		G TT															-	• •	-		263
261	Gl	n Ph	e En	d													-	~~-	ī., '	7-1-	

Aquifex pyrophilus - 28LC

1	TTG	AGA	TTG	AGG	AAA	TTT	GAA	GAG	ATA	AAC	CTC	GTT	CTT	TCG	GGA	GGA	GCT	GCA	AAG	GGC	60
	Leu	Arg	Leu	Arg	Lys	Phe	Glu	Glu	Ile	Asŋ	Leu	Val	Leu	Ser	Gly	Gly	Ala	Ala	Lys	Gly	20
61	ATA	GCC	CAC	ATA	GGT	GTT	TTG	AAA	GCT	ATA	AAC	GÅG	CTC	GGT	ATA	AGG	GTG	AGG	GCT	TTA	120
21	Ile	Ala	His	Ile	Gly	Val	Leu	Lys	Ala	Ile	Asn	Glu	Leu	Gly	Ile	Arg	Val	Arg	Ala	Leu	40
121	AGC	GGG	GTG	AGC	GCC	GGG	GCA	ATC	GTT	TCG	GTC	TTT	TAT	GCC	TCA	GGC	TAC	TCC	CCT	GAA	180
41	Ser	Gly	Val	Ser	Ala	Gly	Ala	Ile	Val	Ser	Val	Phe	Tyr	Ala	Ser	Gly	Tyr	Ser	Pro	Glu	60
181	GGG	ATG	TTC	AGC	CTT	CTG	AAG	AGG	GTA	AAC	TGG	CTG	AAG	CTG	TTT	AAG	TTC	AAG	CCA	CCT	240
61	Gly	Met	Phe	Ser	Leu	Leu	Lys	Arg	Val	Asn	Trp	Leu	Lys	Leu	Phe	Lys	Phe	Lys	Pro	Pro	80
241	CTG	AAG	GGA	TTG	ATA	GGG	TGG	GAG	AAG	GCT	ATA	AGA	TTC	CTT	GAG	GAA	GTT	CTC	CCT	TAC	300
81	Leu	Lys	Gly	Leu	Ile	Gly	Trp	Glu	Lys	Ala	Ile	Arg	Phe	Leu	Glu	Glu	Val	Leu	Pro	Tyr	100
301	AGG	AGA	ATA	GAA	AAA	CTT	GAG	ATA	CCG	ACG	TAT	ATA	TGC	GCG	ACG	GAT	TTA	TAC	TCG	GGA	360
101	Arg	Arg	Ile	Glu	Lys	Leu	Glu	Ile	Pro	Thr	Tyr	Ile	Cys	Ala	Thr	Asp	Leu	Tyr	Ser	Gly	120
361	AGG	GCT	CTA	TAC	CTC	TCG	GAA	GGG	AGT	TTA	ATC	CCC	GCA	CTT	CTC	GGC	AGC	TGT	GCA	ATT	420
121	Arg	Ala	Leu	Tyr	Leu	Ser	Glu	Gly	Ser	Leu	Ile	Pro	Ala	Leu	Leu	Gly	Ser	Cys	Ala	Ile	140
421	CCC	GGC	ATA	TTT	GAA	CCC	GTT	GAG	TAT	AAG	AAT	TAC	TTG	CTC	GTT	GAC	GGA	GGT	ATA	GTT	480
141	Pro	Gly	Ile	Phe	Glu	Pro	Val	Glu	Tyr	Lys	Asn	Tyr	Leu	Leu	Val	Asp	Gly	Gly	Ile	Val	160
481	AAC	AAC	CTT	CCC	GTT	GAG	CCC	TTT	CAG	GAA	AGC	GGT	ATT	CCC	ACC	GTT	TGC	GTT	GAT	GTC	540
161	Asn	Asn	Leu	Pro	Val	Glu	Pro	Phe	Gln	Glu	Ser	Gly	Ile	Pro	Thr	Val	Cys	Val	Asp	Val -	180
541	CTT	CCC	ATA	GAG	CCG	GAA	AAG	GAT	ATA	AAG	AAC	ATT	CTT	CAC	ATC	CTT	TTG	AGG	AGC	TTC	600
181	Leu	Pro	Ile	Glu	Pro	Glu	Lys	Asp	Ile	Lys	Asn	Ile	Leu	His	Ile	Leu	Leu	Arg	Ser	Phe	200
601	TTT	CIT	GCG	GTC	CGC	TCA	AAC	TCC	GAA	AAG	AGA	AAG	GAG	TIT	TGT	GAC	CTC	GTT	ATA	GTT	660
201	Phe	Leu	Ala	Val	Arg	Ser	Asn	Ser	Glu	Lys	Arg	Lys	Glu	Phe	Cys	Asp	Leu	Val	Ile	Val	220
661	CCT	GAG	CTT	GAG	GAG	TTC	ACA	CCC	CTT	GAT	GTT	AGA	AAA	GCG	GAC	CAA	ATA	ATG	GAG	AGG	720
221	Pro	Glu	Leu	Glu	Glu	Phe	Thr	Pro	Leu	Asp	Val	Arg	Lys	Ala	Asp	Gln	Ile	Met	Glu	Arg	240
721 241					GCC Ala																756 252

FIGURE 5 Miltl-29L.

																					_
1	ATG	TTT	AAT	ATC	AAT	GTC	TTT	GTT	AAT ["]	ATA	TCT	TGG	CTG	ТАТ	TTT	TCA	GGG	ATA	GTT	ATG	60
	Met	Phe	Asn	Ile	Asn	Val	Phe	Val	Asn	11e	Ser	Trp	Leu	Туг	Phe	Ser	Gly	Ile	Val	Met	20
61	AAG	ACT	GTG	GAA	GAG	TAT	GCG	CTA	ĆIT	GAA	ACA	GGC	GTA	AGA	GTG	TTT	тат	CGG	TGT	GTA	120
21	Lys	Thr	Val	Glu	Glu	Tyr	Ala	Leu	Ļeu	Glu	Thr		Val	Arg	Val	Phe	туг	Arg	Cys	Val	40
121	ATC	CCG	GAG	AAA	GCT	TTT	AAC	ACT	TŢ G	'ATA	ATA'	GGT	TCA	CAC	GGA	TTG	GGG	GCG	CAC	AGT	180
41	Ile	Pro	Glu	Lys	Ala	Phe	Asn	Thr	Leu	Ile	Ile	Gly	Ser	His	Gly	Leu	Gly	Ala	His	Ser	60
181	GGA	ATC	TAC	ATT	AGT	GTT	GCT	GAA	GAA	TTT	GCT	AGG	CAC	GGA	TTT	GGA	TTC	TGC	ATG	CAC	240
61	Gly	Ile	Tyr	Ile	Ser	Val	Ala	Glu	Glu	Phe	Ala	Arg	His	Gly	Phe	Gly	Phe	Cys	Met	His	80
241	GAT	CAA	AGG	GGA	CAT	GGG	AGA	ACG	GCA	AGC	GAT	AGA	GAA	AGA	GGG	TAT	GTG	GAG	GGC	TTT	300
81	Asp	Gln	Arg	Gly	His	Gly	Arg	Thr	Ala	Ser	Asp	Arg	Glu	Arg	Gly	Tyr	Val	Glu	Gly	Phe	-100
301	CAC	AAC	TTC	ATA	GAG	GAT	ATG	AAG	GCC	TTC	TCC	GAT	TAT	GCC	AAG	TGG	CGC	GTG	GGA	GGT	360
101	His	Asn	Phe	Ile	Glu	Asp	Met	Lys	Al a	Phe	Ser	Asp	Tyr	Ala	Lys	Trp	A rg	Val	Gly	Gly	120
361	GAC	GAA	ATA	ATA	TTG	CTA	GGA	CAC	AGT	ATG	GGC	GGG	CTG	ATA	GCG	CTC	TTA	ACA	GTT	GCA	420
121	Asp	Glu	Ile	Ile	Leu	Leu	Gly	His	Ser	Met	Gly	Gly	Leu	Ile	Ala	Leu	Leu	Thr	-Val	Ala	140
421	ACT	TAT	AAA	GAA	ATC	GCC	AAG	GGA	GTT	ATC	GCG	CTA	GCC	CCG	GCC	CTC	CAA	ATC	CCC	TTA	480
141	Thr	Tyr	Lys	Glu	Ile	Ala	Lys	Gly	Val	Ile	Ala	Leu	Ala	Pro	Ala	Leu	Gln	Ile	Pro	Leu	160
481	ACC	CCG	GCT	AGA	AGA	CTT	GTT	CTA	AGC	CTC	GCG	TCA	AGG	CTT	GCC	CCG	CAT	TCT	AAG;	ATC	540
161	Thr	Pro	Ala	Arg	Arg	Leu	Val	Leu	Ser	Leu	Ala	Ser	Arg	Leu	Ala	Pro		Ser	Lys	11e	180
541	ACC	TTA	CAA	AGG	AGA	TTG	CCG	CAG	AAA	CCA	GAG	GGT	TTT	CAA	AGA	GCA	AAA	GAT	ATA	GAA	600
181	Thr	Leu	Gln	Arg	Arg	Leu	Pro	Gln	Lys	Pro	Glu	Gly	Phe	Gln	Arg	Ala	Lys	Asp	Ile	Glu	200
601	TAC	AGT	CTG	AGT	GAA	ATA	TCA	GTC	AAG	CTC	GTG	GAC	GAA	ATG	ATT	AAA	GCA	TCA	TCT	ATG	660
201	Tyr	Ser	Leu	Ser	Glu	Ile	Ser	Val	Lys	Leu	Val	Asp	Glu	Met	Ile	Lys	Ala	Ser	Ser	Met	220
661	TTC	TGG	ACC	ATA	GCA	GGG	GAA	ATT	AAT	ACT	CCC	GTC	CTG	CTT	ATT	CAT	GGG	GAA	AAA	GAC	720
221	Phe	Trp	Thr	Ile	Ala	Gly	Glu	Ile	Asn	Thr	Pro	Val	Leu	Leu	Ile	His	Gly	Glu	Lys	Asp	240
721	AAT	GTC	ATA	CCT	CCG	GAG	GCG	AGC	AAA	AAA	GCC	TAC	CAA	TTA	ATA	CCT	TCA	TTC	CCT	AAA	780
241	Asn	Val	Ile	Pro	Pro	Glu	Ala	Ser	Lys	Lys	Ala	Tyr	Gln	Leu	Ile	Pro	Ser	Phe	Pro	Lys	260
781	GAG	TTG	AAA	ATA	TAC	CCC	GAT	CTT	GGA	CAC	AAC	TTG	TIT	TTT	GAA	CCA	GGC	GCG	GTG	AAA	840
261	Glu	Leu	Lys	Ile	Tyr	Pro	Asp	Leu	Gly	His	Asn	Leu	Phe	Phe	Glu	Pro	Gly	Ala	Val	Lys	280
841	ATC	GTC	ACA	GAC	TTA	GTA	GAG	TGG	GTT	AAG	TAA	ста	ccc	AGG	GAA	ААТ	сст	TAA	8	94	
281	116	va:	1 Th	c Asp	ıle	Val	Glu	Trp	Val	Lys	Asn	Leu	Pro	Arg	Glu	Asn	Pro	End	2	98	

Thermococcus CL-2-30LC

														,				-	_			-
1	ATG Met	GAG Glu	GTT Val	TAC Tyr	AAG Lys	GCC Ala	AAA Lys	TTC Phe	GĴλ' GCC	'GAA Ģlu	GCA Ala	AAG Lys	CTC Leu	GGC Gly	TGG Trp	GTC Val	GTT Val	CTG Leu	GTT Val	CAT His	20) .
.61	GGC	CTC	GGC	GAG	CAC	AGC	GGA	AGG	TAT	GGA	AGA	.CTG	ATT	AAG	GAA	CTC	AAC	TAT	GCC	GGC	12	0
21	Gly	Leu	Gly	Glu	His	Ser	Gly	Arg	Tyr'	Gly	Arg	Leu	Ile	Lys	Glu	Leu	Asn	Tyr	Ala	Gly	40	
121 41	TTT Phe	GGA Gly	GTT Val	TAC Tyr	ACC Thr	TTC Phe	GAC Asp	TGG Trp	CCC Pro	GGC Gly	CAC His	GGG Gly	AAG Lys	AGC Ser	CCG Pro	GGC Gly	AAG Lys	AGA Arg	GGG Gly	CAC	18	
181	ACG	AGC	GTC	GAG	GAG	GCG	ATG	GAA	ATC	ATC	GAC	TCG	ATA	ATC	GAG	GAG	ATC	AGG	GAG	AAG	24	
61	Thr	Ser	Val	Glu	Glu	Ala	Met	Glu	Ile	Ile	Asp	Ser	Ile	Ile	Glu	Glu	Ile	Arg	Glu	Lys	80	
241	CCC	TTC	CTC	TTC	GGC	CAC	AGC	CTC	GGT	GGT	CTA	ACT	GTC	ATC	AGG	TAC	GCT	GAG	ACG	CGG	30	
81	Pro	Phe	Leu	Phe	Gly	H1s	Ser	Leu	Gly	Gly	Leu	Thr	Val	Ile	Arg	Tyr	Ala	Glu	Thr	Arg	10	
301	CCC	GAT	AAA	ATA	CGG	GGA	TTA	ATA	GCT	TCC	TCG	CCT	GCC	CTC	GCC	AAG	AGC	CCG	GAA	ACG	36	
101	Pro	Asp	Lys	Ile	Arg	Gly	Leu	Ile	Ala	Ser	Ser	Pro	Ala	Leu	Ala	Lys	Ser	Pro	Glu	Thr	12	
361 121	CCG Pro	GGC Gly	TTC Phe	ATG Met	GTG Val	GCC Ala	CTC Leu	GCG Ala	AAG Lys	TTC Phe	CTT Leu	GGA Gly	AAG Lys	ATC Ile	GCC Ala	CCG Pro	GGA Gly	GTT Val	GTT Val	CTC	.42	
421	TCC	AAC	GGC	ATA	AAG	CCG	GAA	CTC	CTC	TCG	AGG	AAC	AGG	GAC	GCC	GTG	AGG	AGG	TAC	GTT	48	0
141	Ser	Asn	Gly	Ile	Lys	Pro	Glu	Leu	Leu	Ser	Arg	Asn	Arg	Asp	Ala	Val	Arg	Arg	Tyr	Val	16	
481	GAA	GAC	CCA	CTC	GTC	CAC	GAC	AGG	ATT	TCG	GCC	AAG	CTG	GGA	AGG	AGC	ATC	TTC	GTG	AAC	54	0
161	Glu	Asp	Pro	Leu	Val	His	Asp	Arg	Ile	Ser	Ala	Lys	Leu	Gly	Arg	Ser	Ile	Phe	Val	Asn	18	
541	ATG	GAG	CTG	GCC	CAC	AGG	GAG	GCG	GAC	AAG	ATA	AAA	GTC	CCG	ATC	CTC	CTT	CTG	ATC	GGC	60	-
181	Met	Glu	Leu	Ala	His	Arg	Glu	Ala	Asp	Lys	Ile	Lys	Val	Pro	Ile	Leu	Leu	Leu	Ile	Gly	2,0	
601	ACT	GGC	GAT	GTA	ATA	ACC	CCG	CCT	GAA	GGC	TCA	CGC	AGA	CTC	TTC	GAG	GAG	CTG	GCC	GTC	66	
201	Thr	Gly	Asp	Val	Ile	Thr	Pro	Pro	Glu	Gly	Ser	Arg	Arg	Leu	Phe	Glu	Glu	Leu	Ala	Val	- 22	
661	GAG	AAC	AAA	ACC	CTG	AGG	GAG	TTC	GAG	GGG	GCG	TAC	CAC	GAG	ATA	TTT	GAA	GAC	CCC	GAG	72	
221	Glu	Asn	Lys	Thr	Leu	Arg	Glu	Phe	Glu	Gly	Ala	Tyr	His	Glu	Ile	Phe	Glu	Asp	Pro	Glu	24	
721	TGG	GCC	GAG	GAG	TTC	CAC	GAA	ACA	ATT	GTT	AAG	TGG	CTG	GTT	GAA	AAA	TCG	TAC	TCT	TCG	78	
241	Trp	Ala	Glu	Glu	Phe	His	Glu	Thr	Ile	Val	Lys	Trp	Leu	Val	Glu	Lys	Ser	Tyr	Ser	Ser	26	
781	GCT	CAA	TAA		89																	

781 GCT CAA TAA 789 261 Ala Gln End 263

Aquifex VP5-34LC

1	TTG Leu	ATT Ile	GGC Gly	AAT Asn	TTG Leu	AAA Lys	TTG Leu	AAG Lys	AGG '	TTT Phe	GAA Glų	GAG Glu	GTT Val	AAC Asn	TTA Leu	GTT Val	CTT Leu	TCG Ser	GGA Gly	GGG Gly	60 20
61	GCT	GCC	AAG	GGT	ATC	GCC	CAT	ATA	GGT	GTT	TTA	AAA	GCT	CTG	GAA	GAG	CTC	GGT	ATA	AAG	120
21	Ala	Ala	Lys	Gly	Ile	Ala	His	Ile	Gly	Val	Leu	Lys	Ala	Leu	Glu	Glu	Leu	Gly	Ile	Lys	40
121	GTA	AAG	AGG	CTC	AGC	GGG	GTA	AGT	GCT	GGA	GCT	ATC	GTT	TCC	GTC	TTT	TAC	GCT	TCG	GGC	180
41	Val	Lys	Arg	Leu	Ser	Gly	Val	Ser	Ala	Gly	Ala	Ile	Val	Ser	Val	Phe	Tyr	Ala	Ser	Gly	60
181	TAC	ACT	CCC	GAC	GAG	ATG	TTA	AAA	CTC	CTG	AAA	GAG	GTA	AAC	TGG	CTC	AAA	CTT	TTT	AAG	240
61	Tyr	Thr	Pro	Asp	Glu	Met	Leu	Lys	Leu	Leu	Lys	Glu	Val	Asn	Trp	Leu	Lys	Leu	Phe	Lys	80
241	TTC	AAA	ACA	CCG	AAA	ATG	GGC	TTA	ATG	GGG	TGG	GAG	AAG	GCT	GCA	G AG	TTT	TTG	GAA	AAA	300
81	Phe	Lys	Thr	Pro	Lys	Met	Gly	Leu	Met	Gly	Trp	Glu	Lys	Ala	Ala	Glu	Phe	Leu	Glu	Lys	100
301	GAG	CTC	GGA	GTT	AAG	AGG	CTG	GAA	GAC	CTG	AAC	ATA	CCA	ACC	TAT	CTT	TGC	TCG	GCG	GAT	360
101	Glu	Leu	Gly	Val	Lys	Arg	Leu	Glu	Asp	Leu	Asn	Ile	Pro	Thr	Tyr	Leu	Cys	Ser	Ala	Asp	120
361	CTG	TAC	ACG	GGA	AAG	GCT	CTT	TAC	TTC	GGC	AGA	GGT	GAC	TTA	ATT	CCC	GTG	CTT	CTC	GGA	420
121	Leu	Tyr	Thr	Gly	Lys	Ala	Leu	Tyr	Phe	Gly	Arg	Gly	Asp	Leu	Ile	Pro	Val	Leu	Leu	Gly	140
421 141	Ser	Cys	Ser	Ile	Pro	Gly	ATT Ile	Phe	Glu	Pro	Val	Glu	Tyr	Glu -	Asn	Pne	Leu		vai	ASP	480 160
481 161	Gly	Gly	Ile	Val	Asn	Asn	CTG Leu	Pro	Val	Glu	Pro	Leu	Glu	Lys	Phe	rys	GIU	Pro	He	116	540 180
541 181	Gly	Val	Asp	Val	Leu	Pro	ATA Ile	Thr	Gln	Glu	Arg	Lys	Ile	Lys	Asn	116	Leu	ніѕ	116	reu	600 200
601 201	Ile	Arg	Ser	Phe	Phe	Leu	GCG Ala	Val	Arg	Ser	Asn	Ser	Glu	Lys	Arg	Lys	GIu	Pne	Cys	Asn	660 220
661	GTA	GTT	ATA	GAA	CCT	CCC	CTT	GAA	GAG	TTC	TCT	CCT	CTG	GAC	GTA	AAT	AAG	GCG	GAC	GAG	720
221	Val	Val	Ile	Glu	Pro		Leu	Glu	Glu	Phe	Ser	Pro	Leu	Asp	Val	Asn	Lys	Ala	Asp	Glu	240
721 241							AGA Arg					50 50									

Teredinibacter - 42L

- 1	ATG	CCA	GCT	AAT	GAC	TCA	CCC	ACG	ATC	GAC	TTT	AÄT	CCT	CGC	GGC	ATT	CTT	CGC	AAC	GCT	60
1	Met	Pro	Ala	Asn	Asp	Ser	Pro	Thr	Ile	Asp	Phe	Asn	Pro	A rg	Gly		Leu	Arg	Asn	Ala	20
61	CAC	GCA	CAG	GTT	Iļe	TTA	GCG	ACT	TCC	GGC	TTG	CGC	AAA	GCG	TTT	TTĞ	AAA	CGC	ACG	CAC	120
21	His	Ala	Gln	Val	Iļe	Leu	Alá:	Thr	Ser	G1M	Leu	Arg	Lys	Ala	Phe	Leu	Lys	Arg	Thr	His	40
121	AAG	AGC	TAC	CTC	AGC	ACT	GCC	CAA	TGG	CTG	GAG	CTC	GAT	GCC	GGC	AAC	GGA	GTT	ACC	TTG	180
41	Lys	Ser	Tyr	Leu	Ser	Thr	Ala	Gln	Trp	Leu	Glu	Leu	Asp	Ala	Gly	Asn	Glý	Val	Thr	Leu	60
181	GCC	GGA	GAG	CTT	AAC	ACA	GCG	CCT	GCA	ACT	GCA	TCC	TCC	TCC	CAC	CCG	GCG	CAC	AAG	AAC	240
	Ala	Gly	Glu	Leu	Asn	Thr	Ala	Pro	Ala	Thr	Ala	Ser	Ser	Ser	His	Pro	Ala	His	Lys	Asn	80
241	ACT	CTG	GTT	ATT	GTG	CTG	CAC	GGC	TGG	GAA	GGC	TCC	AGC	CAG	TCG	GCC	TAT	GCG	ACC	TCC	300
81	Thr	Leu	Val	Ile	Val	Leu	His	Gly	Trp	Glu	Gly	Ser	Ser	Gln	Ser	Ala	Tyr	Ala	Thr	Ser	100
2301	GCT	GGC	AGC	ACG	CTT	TTC	GAC	AAT	GGG	TTC	GAC	ACT	TTT	CGC	CTT	AAT	TIT	CGC	GAT	CAC	360
101	Ala	Gly	Ser	Thr	Leu	Phe	Asp	Asn	Gly	Phe	Asp	Thr	Phe	Arg	Leu	Asn	Phe	Arg	Asp	His	120
361	GGC	GAC	ACC	TAC	CAC	TTA	AAC	CGC	GGC	ATA	TTT	AAC	TCA	TCG	CTG	ATT	GAC	GAA	GTA	GTG	420
121	Gly	Asp	Thr	Tyr		Leu	Asn	Arg	Gly	Ile	Phe	Asn	Ser	Ser	Leu	Ile	Asp	Glu	Val	Val	140
421	GGC	GCA	GTC	AAA	GCC	ATC	CAG	CAG	CAA	ACC	GAC	TAC	GAC	AAG	TAT	TGC	CTG	ATG	GGG	TTC	480
141	Gly	Ala	Val	Lys	Ala	Ile	Gln	Gln	Gln	Thr	Asp	Tyr	Asp	Lys	Tyr	Cys	Leu	Met	Gly	Phe	160
481	TCA	CTG	GGT.	GGG	AAC	TTT	GCC	TTG	CGC	GTC	GCG	GTG	CGG	GAA	CAG	CAT	CTC	GCT	AAA	CCG	540
161	Ser	Leu	Gly	Gly	Asn	Phe	Ala	Leu	Arg	Val	Ala	Val	Arg	Glu	Gln	His	Leu	Ala	Lys	Pro	180
541 181	CTA Leu	GCG Ala	GGC	GTG Val	CTC	GCC Ala	GTA Val	TGC Cys	CCG Pro	GTA Val	CTC Leu	GÁC Asp	CCC Pro	GCA Ala	CAC His	ACC Thr	ATG Met	ATG Met	GCC Ala	CTA Leu	600 200
601	AAC	CGA	GGT	ĢCG	TTT	TTC	TAC	GGC	CGC	TAT	TTT	GCG	CAT	ĀAA	TGG	AAG	CGC	TCG	TTA	ACC	660
201	Asn	Arg	Gly	Ala	Phe	Phe	Tyr	Gly	Arg	Tyr	Phe	Ala	His	Lys	Trp	Lys	Arg	Ser	Leu	Thr	220
661	GCA	AAA	CTT	GCA	GCT	TTC	CCA	GAC	TAC	AAA	TAC	GGC	AAA	GAT	TTA	AAA	TCG	ATA	CAC	ACG	720
221	Ala	Lys	Leu	Ala	Ala	Phe		Asp	Tyr	Lys	Tyr	Gly	Lys	Asp	Leu	Lys	Ser	Ile	His	Thr	240-
721	CTT	GAT	GAG	TTA	AAC	AAC	TAT	TTC	ATT	CCC	CGC	TAC	ACC	GGC	TTC	AAC	TCA	GTC	TCC	GAA	780
241	Leu	Asp	Glu	Leu	Asn	Asn	Tyr	Phe	Ile		Arg	Tyr	Thr	Gly	Phe	Asn	Ser	Val	Ser	Glu	260
781	TAC	TTC	AAA	AGT	TAC	ACG	CTC	ACC	GGG	CAG	AAG	CTC	GCG	TTT	CTC	AAC	TGC	CCC	AGT	TAC	840
261	Tyr	Phe	Lys	Ser	Tyr	Thr	Leu	Thr	Gly	Gln	Lys	Leu	Ala	Phe	Leu	Asn	Cys	Pro	Ser	Tyr	280
841	ATT	CTG	GCA	GCT	GGC	GAC	GAC	CCA	ATA	ATT	CCA	GCA	TCC	GAC	TTT	CAG	AAA	ATA	GCC	AAG	900
-281	Ile	Leu	Ala	Ala	Gly	Asp	Asp	Pro	Ile		Pro	Ala	Ser	Asp	Phe	Gln	Lys	Ile	Ala	Lys	300
901 301	CCT Pro	GCG Ala	AAT Asn	CTG Leu	CAC His	ATA Ile	ACA Thr	GTA Val	ACG Thr	CAA Gln	CAA Gln	GGT Gly	TCT	CAT	TGC Cys	GCA Ala	TAC	CTG Leu	GAA Glu	AAC Asn	960 320
961 321	CTG Leu	CAT His	AAA Lys	CCT	AGT Ser	GCT Ala	GCC Ala	GAC Asp	AAA Lys	TAT Tyr	GCG Ala	GTG Val	AAA Lys	TTA Leu	TTT Phe	GGA Gly	GCC	ТСТ Суз	TGA End	10 33	17

RIGURE 9

Archeoglobus fulgidas VC16 - 16MC1

ATG CTT GAT ATG CCA ATC GAC CCT GTT TAC TAC CAG CTT GCT GAG TAT
Met Leu Asp Met Pro Ile Asp Pro Val Tyr Tyr Gln Leu Ala Glu Tyr \$ 15. TTC GAC AGT CTG CCG PAGE TTC GAC CAG TTT TCC TCG GCC AGA GAG TAC
Phe Asp Ser Leu Pro Lys Phe Asp GLn Phe Ser Ser Ala Arg Glu Tyr AGG GAG GCG ATA AAT CGA ATA TAC GAG GAG AGA AAC CGG CAG CTG AGC
Arg Glu Ala Ile Asn Arg Ile Tyr Glu Glu Arg Asn Arg Gln Leu Ser
35 40 CAG CAT GAG AGG GTT GAA AGA GTT GAG GAC AGG ACG ATT AAG GGG AGG Gln His Glu Arg Val Glu Arg Val Glu Asp Arg Thr Ile Lys Gly Arg 50 55 60 AAC GGA GAC ATC AGA GTC AGA GTT TAC CAG CAG AAG CCC GAT TCC CCG Asn Gly Asp Ile Arg Val Arg Val Tyr Gln Gln Lys Pro Asp Ser Pro 65 70 75 80 GGT CTG GTT TAC TAT CAC GGT GGT GGA TTT GTG ATT TGC AGC ATC GAG Val Leu Val Tyr Tyr His Gly Gly Gly Phe Val Ile Cys Ser Ile Glu 85 90 95 TCG CAC GAC GCC TTA TGC AGG AGA AYY GCG AGA CTT TCA AAC TCT ACC Ser HIs Asp Ala Leu Cys Arg Arg Ile Ala Arg Leu Ser Asn Ser Thr 100 105 110 GTA GTC TCC GTG GAT TAC AGG CTC GCT CCT GAG CAC AAG TTT CCC CCC Val Val Ser Val Asp Tyr Arg Leu Ala Pro Glu His Lys Phe Pro Ala 115 CCA GTT TAT CAT TGC TAC GAT GCG ACC AAG TGG GTT GCT GAG AAC CGG
Ala Val Tyr Asp Cys Tyr Aso Ala Thr Lys Trp Val Ala Glu Asn Ala
130
135
140 GAG GAG CTG AGG ATT GAC CCG TCA AAA ATC TTC GTT GGG GGG GAC AGT Glu Glu Leu Arg Ile Asp Pro Ser Lys Ile Phe Val Gly Gly Asp Ser 150 155 160 GCG GGA CGG AAT CTT GCC CCG GCG CTT TCA ATA ATG GCG AGA GAC AGC Ala Gly Gly Asn Leu Ala Ala Ala Val Ser Ile Met Ala Arg Asp Ser 165 GGA GAA GAT TTC ATA AAG CAT CAA ATT CTA ACT TAC CCC GTT GTG AAC Gly Glu Asp Phe Ile Lys His Gln Ile Leu Ile Tyr Pro Val Val Asn 180 TTT GTA GCC CCC ACA CCA TCG CTT CTG GAG TTT GGA GAG GGG CTG TGG
Phe Val Ala Pro Thr Pro Ser Leu Leu Glu Phe GLy Glu Gly Leu Trp
195 200 205 ATT CTC GAC CAG AAG ATA ATG AGT TGG TTC TCG GAG CAG TAC TTC TCC Ile Leu Asp Gln Lys Ile Met Ser Trp Phe Ser Glu Gln Tyr Phe Ser 210 215 230 . AGA GAG GAA GAT AAG TTC AAG CCC CTC GCC TCC GTA ATC TTT GCG GAC Arg Glu Glu Aso Lys Phe Asn Pro Leu Ala Ser Val 1le Phe Ala Asp 235 CTT GAG AAC CTA CCT CCT GCG CTG ATC ATA ACC GCC GAA TAC GAC CCG Leu Glu Asn Leu Pro Pro Ala Leu Ile Ile Thr Ala Glu Tyr Asp Pro 255 260 265 CTG AGA GAT GAA GGA GAA GTT TTC GGG CAG ATG CTG AGA AGA GCC GGT Leu Arg Asp Glu Glu Val Phe Gly Gln Met Leu Arg Arg Ala Gly 270 275 280 GTT GAG GCG AGC ATC GTC AGA TAC AGA GGC GTG CTT CAC GGA TTC ATC Val Glu Ala Ser Ile Val Arg Tyr Arg Gly Val Leu His Gly Phe Ile 285 AAT TAC TAT CCC GTG CTG AAG GCT GCG AGG GAT GCG ATA AAC CAG ATT ASN TYR TYR PRO Val Leu Lys Ala Ala Arg Asp Ala Ile Asn Gln Ile 300 305 310

GCC GCT CTT CTT GTG TTC GAC TAG Ala Ala Leu leu Val Phe Asp 315

了。而我们的**是我们**。48年,

PIGURE 10

Sulfolobus Solfataricus Pl - 8LC1

ATG CCC CTA GAT CCT AGA ATT. AAA AAG TTA CTA GAA TCA GCT CTT ACT Met Pro Leu Asp Pro Arg Ile Lys Lys Leu Deu Glu Ser Ala Leu Thr 1 5 10 15

ATA CCA ATT GGT AAA GCC CCA GTA GAA GAG GTA AGA AGA ATA TTT AGG Ile Pro Ile Gly Lys Ala Pro Val Glu Glu Val Arg Lys Ile Phe Arg 20 25 30

CAA TTA GCG TCG GCA GCT CCC AAA GTC GAA GTT GGA AAA GTA GAA GAT Gln Leu Ala Ser Ala Ala Pro Lys Val Glu Val Gly Lys Val Glu Asp 35 40 45

ATA AAA ATA CCA GGC AGT GAA ACC GTT ATA AAC GCT AGA GTG TAT TTT Ile Lys Ile Pro Gly Ser Glu Thr Val Ile Asn Ala Arg Val Tyr Phe 50 60

CCG AAG AGT AGC GGT CCT TAT GGT GTT CTA GTG TAT CTT CAT GGA GGC Pro Lys Ser Ser Gly Pro Tyr Gly Val Leu Val Tyr Leu His Gly Gly 65

GGT TTT GTA ATA GGC GAT GTG GAA TCT TAT GAC CCA TTA TGT AGA GCA Gly Phe Val lle Gly Asp Val Glu Ser Tyr Asp Pro Leu Cys Arg Ala 85 90 95

ATT ACA AAT GCG TGC AAT TGC GTT GTA GTA TCA GTG GAC TAT AGG TTA Ile Thr Asn Ala Cys Asn Cys Val Val Val Ser Val Asp Tyr Arg Leu 100 105 110

GCT CCA GAA TAC AAG TTT CCT TCT GCA GTT ATC GAT TCA TTT GAC GCT Ala Pro Glu Tyr Lys Phe Pro Ser Ala Val Ile Asp Ser Phe Asp Ala 115 120 125

ACT AAT TGG GTT TAT AAC AAT TTA GAT AAA TTT GAT GGA AAG ATG $\bar{G}GA$ Thr Asn Trp Val Tyr Asn Asn Leu Asp Lys Phe Asp Gly Lys Met Gly 130

GTT GCG ATT GCG GGA GAT AGT GCT GGA GGA AAT TTG GCA GCG GTT GTA
Val Ala Ile Ala Gly Asp Ser Ale Gly Gly Asn Leu Ala Ala Val
145 155 160

GCT CTT CTT TCA AAG GGT AAA ATT AAT TTG AAG TAT CAA ATA CTG GTT Ala Leu Leu Ser Lys Gly Lys Ile Asn Leu Lys Tyr Gln Ile Leu Val 165 170 175

TAC CCA GCG GTA AGT TTA GAT AAC GTT TCA AGA TCC ATG ATA GAG TAC
Tyr Pro Ala Val Ser Leu Asp Asn Val Ser Arg Ser Met Ile Glu Tyr
180 185

TCT GAT GGG TTC TTC CTT ACC AGA GAG CAT ATA GAG TGG TTC GGT TCT Ser Asp Gly Phe Phe Leu Thr Arg Glu His Ile Glu Trp Phe Gly Ser 195 200 205

CAA TAC TTA CGA AGC CCT GCA GAT TTG CTA GAC TTT AGG TTC TCT CCA
Gln Tyr Leu Arg Ser Pro Ala Asp Leu Leu Asp Phe Arg Phe Ser Pro
210 215 220

ATT CTG GCG CAA GAT TTC AAC GGA TTA CCT CCA GCC TTG ATA ATA ACA Ile Leu Ala Gln Asp Phe Asn Gly Leu Pro Pro Ala Leu Ile Thr 235 240

GCA GAA TAC GAT CCA CTA AGG GAT CAA GGA GAA GCG TAT GCA AAT AAA Ala Glu Tyr Asp Pro Leu Arg Asp Gln Gly Glu Ala Tyr Ala Asn Lys 255

CTA CTA CAA GCT GGA GTC TCA GTT ACT AGT GTG AGA TTT AAC AAC GTT Leu Leu Gln Ala Gly Val Ser Val Thr Ser Val Arg Phe Asn Asn Val 260 270

ATA CAC GGA TTC CTC TCA TTC TTT CCG TTG ATG GAG CAA GGA AGA GAT Ile His Gly Phe Leu Ser Phe Phe Pro Leu Met Glu Gln Gly Arg Asp 275 285

GCT ATA GGT CTG ATA GGG TCT GTG TTA AGA CGA GTA TTT TAT GAT AAA Ala ile Gly Leu ile Gly Ser Val Leu Arg Arg Val Phe Tyr Asp Lys 290 295 300

AAT TAA

Ile

305